

## Lehigh Cement Company Alternative Fuel Proposal *A Presentation for Our Community*



### Introduction

For more than 125 years, the Lehigh Cement Company plant on Warren Street in Glens Falls has been an important member of the regional community, employing generations of local men and women in the manufacture of cement for our homes, offices, roads and bridges. Our goal every day is to make high-quality products in a way that is safe for our employees, protective of our environment and our neighbors, and allows us to remain competitive in an always-challenging market.

For a number of years now, we have explored the possibility of replacing a portion of our fossil fuel use with an engineered fuel, reducing our use of coal and natural gas and our fuel costs.

In the Summer of 2017, with the authorization and oversight of the New York State Department of Environmental Conservation, we conducted trial runs and air emissions tests using an engineered fuel made up of recycled corrugated cardboard fiber and the plastic-based tapes, labels and wrappings commonly found on cardboard packaging. Upon review of the tests, DEC determined that Lehigh's air emissions will continue to be below our existing permit limits which were established by the federal Environmental Protection Agency and New York State as being protective of human health and the environment.

Based on this determination, DEC has issued a draft permit allowing Lehigh to incorporate this fuel into its fuel mix at a maximum of 15%, and opened a public comment period on the draft.

## What is this alternative fuel?

The fuel we are proposing to use is a mix of recycled corrugated cardboard fiber and the plastic-based tapes, labels and wrappings commonly found on corrugated cardboard boxes. When these boxes are put into recycling bins from homes or offices, they are sometimes sold back to corrugated cardboard manufacturers to be recycled into new product. This is done by placing the cardboard in bales into a pulper where water is used to break the cardboard back down into fibers. To remove the tapes, labels and wrappings, and the baling wire, a chain-like rope is placed inside the pulper. The tapes, labels, wrappings and wire — along with some of the cardboard fiber — wrap around the rope and are pulled from the pulper. This material is then sent to Lehigh's alternative fuel supplier, Frontier Fiber, where it is



processed through screen shredders, magnets, and an eddy current to remove the wire before it is shipped to Lehigh. Without a fuel market, this material would be landfilled.

## How will Lehigh use this fuel?


To manufacture cement, Lehigh heats its cement kiln to a temperature of 3,500 degrees Fahrenheit, converting limestone into a man-made, stone-like material called clinker. We currently use fossil fuels — coal, natural gas or a combination of the two — to fuel our kiln. If our final permit is granted, we will begin using the alternative fuel, in combination with coal and/or natural gas, at a maximum of 15% of our total fuel mix.

## Why does Lehigh want to use an alternative fuel?

There are a number of advantages to using alternative fuels. Use of this product will reduce Lehigh's consumption of fossil fuels. It is less expensive than fossil fuels, which will help keep the Glens Falls plant competitive. Finally, providing a beneficial use for this non-recyclable material also helps keep it out of landfills.

## Why does Lehigh's plant create air emissions? How are they controlled?

Any time fuels are combusted — the gasoline in our cars and lawn mowers, the natural gas or propane to heat our homes, the coal or natural gas used by the utilities that provide our electricity, or the fuels to cook limestone in the cement-making process — air emissions are generated. Federal and state regulators require the use of emission-control technologies on emission sources, and Lehigh has invested millions of dollars in this regard, but these technologies are unable



to remove 100% of the constituents that are released when materials are burned. Regulators recognize these limitations and impose strict limits on what can be emitted based on a scientific evaluation of what is protective of human health and the environment.

## **Who regulates Lehigh's air emissions?**

Lehigh's air emissions are tightly regulated by the federal and state governments, and our plant is required to abide by standards and permit conditions that regulators have determined to be protective of human health and the environment.

In 2015, the U.S. Environmental Protection Agency enacted stringent new air emission standards for the entire Portland Cement industry nationwide, which lowered our allowable emissions. Lehigh invested more than \$6 million in enhanced emission controls in Glens Falls to ensure compliance with the new standards and achieve EPA's designated Maximum Achievable Control Technology (MACT). Those lower limits are reflected in our existing air emissions permit.

In July of 2018, as required by law, EPA completed a re-evaluation of the MACT standards for our industry, as well as the public health risks from cement plant air emissions. This re-evaluation consisted of extensive air dispersion modeling and health risk assessments based on data from all Portland cement plants in the country, and EPA concluded that "...the standards provide an ample margin of safety to protect public health, and that it is not necessary to set a more stringent standard to prevent an adverse environmental effect."

## **How are Lehigh's air emissions monitored?**

Lehigh is required to have continuous monitoring for some emissions, and others are measured via periodic stack tests at intervals established by the regulators.

Continuous monitoring is in place for the following emissions: mercury, total hydrocarbons, dioxins/furans, particulate matter, nitrogen oxides, opacity and carbon dioxide. By continuous, we mean data is measured five times per second and averaged every minute. Emissions reports are filed with NYSDEC and EPA on required schedules. Daily, weekly and monthly quality assurance calibrations are performed on the monitoring instrumentation and also submitted to regulatory agencies.

For stack testing, we contract with a third-party environmental monitoring firm to conduct annual performance tests for particulate matter and sulfur dioxide; 30-month performance tests for dioxin/furan; and annual relative accuracy test audits for total hydrocarbons, mercury, nitrogen oxides and carbon dioxide. The test protocols are developed and submitted to DEC for approval. DEC personnel are onsite to oversee testing, and stack test reports are submitted to DEC and EPA, along with information on all quality assurance procedures and results, in order to ensure the accuracy of the information.



## How will the alternative fuel impact Lehigh's air emissions?

In the summer of 2017, Lehigh, with DEC's approval and oversight, conducted tests to see how the fuel would work in our kiln and determine if our air emissions would remain below the allowable limits. The emissions testing was performed by an outside contractor under the direction of, and with on-site supervision by, DEC.

- ✓ Lehigh tested for those constituents that are included in our state air permit, and those tests showed that emissions are expected to remain **69%-99% below our current permitted levels with the introduction of the alternative fuel.**
- ✓ In addition to measuring the materials for which we have a permit limit, we tested for certain materials, including metals, that have the potential of being emitted from our processes, as required by New York State law. **Any constituents detected were below the guidelines established by the state. It is also important to note that these constituents were also present in our emissions without the alternative fuel — again at levels below the limits and guidelines.**

## Conclusion

The use of this alternative fuel will help Lehigh's Glens Falls plant reduce its consumption of fossil fuels and lower its fuel costs in a highly competitive cement industry, while keeping its air emissions below all allowable federal and state limits.

We hope you have found this information to be informative, and our proposal to utilize this alternative fuel, along with DEC's issuance of the permit, to be reasonable and responsible as we fight to remain a contributing member of our region's economy and to produce locally made products for our homes, businesses, roads and bridges.

If you have any questions at all about our proposal, please contact our community liaison, John Brodt, at (518) 792-3856, ext. 114.

## AIR EMISSION COMPARISONS

